

Research of the Trait and Quality on Emergency WeChat Platform Based on Service Framework and Quality Gap

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Abstract: In this paper, for a given service quality gap problems of emergency WeChat platform, we discuss the general method for determining the trait of emergency WeChat platform, as well as quality framework, evaluation system of emergency WeChat service. For the determination of the trait of emergency WeChat platform, using SPSS mathematical software to draw an initial shape, through the mathematical method of mean value and balanced scorecard, we build a model, get the coordinate of services quality evaluation initial indexes system of emergency WeChat platform; For quality framework and evaluation system of emergency WeChat service, we define the five dimensionalities items, and optimize the original evaluation system indicators. For the empirical study, we selected six representative platform as the evaluation sample from the emergency platform of Wechat in China, send 100 questionnaires and designed 14 items in questionnaire which corresponding with the evaluation index system. Using the method of multidimensional scaling analysis, we disclose the properties of the multiple samples and the degree of similarity between them. Using the method of grey correlation analysis, we find the degree of quality gap and perform quantitative ordering about the service quality of emergency Wechat platform.

Keywords: Emergency WeChat, quality gap, service framework, the service of WeChat, WeChat platform.

1. INTRODUCTION

Public platform of WeChat is a new functional module based on the instant messaging software of WeChat officially launched on August 23, 2012 by Tencent [1]. Through this public platform, individuals and companies can register a public number of Wechat to implement communication and interaction [2]. Emergency platform of WeChat is one of application in the field of public platform in emergency.

From aspects of theory and practice, the study of Wechat by scholars of Books intelligence in china main focused on two aspects as follows: (1). Technology development level: Liao Weihua studied the feasibility of setting up emergency system based on emergency platform of WeChat and introduced an examples of application of “emergency command system based on Wechat” by Power supply bureau in Foshan, Guangdong province [3]. (2). Application level of Wechat: Siben Kang studied the information push of library based on the public platform of Wechat. He pointed out that with its accurate information push service; the public platform of Wechat has become the ideal tools of information push of library [4]. Through above analysis, we concluded that application of public platform of Wechat is at the stage of exploration. Having an empirical study by Multidimensional Scaling and Gray Relation Analysis, the paper constructs services quality evaluation initial indexes system of emergency platform of WeChat based on balanced scorecard.

2. THEORETICAL FRAMEWORK AND RESEARCH TOOLS

2.1. The Trait and Nature of Wechat Platform Service

Emergency information characteristics of Wechat platform mainly in following respects : (1) immediacy: on opening data connection and the client of Wechat, users can receive messages online and make quick feedback. (2) accuracy: All the information pushed by Wechat have been confirmed by the authorities. (3) universality: The user of Emergency platform of WeChat contains people at all levels and people of all ages. Moreover, universality also reflect in the information itself, In addition to push the latest information on the disaster, a variety of emergency knowledge also be pushed to users.

As the new application of the mobile internet era. Wechat have extensive customer base, relied on its outstanding advantages, it attracts more new users. Its user permeability has maintained steady growth. According to the survey, from the gender perspective, the use of Wechat is more by man than women. From the point of regional distribution, urban user is in the majority, covers 77% of all. From the perspective of the age group of users, Young and middle-aged is in the majority. Above all, users of Wechat presents the characteristics of urbanization, younger, highly educated [5].

Information published by accounts of Wechat is generally divided into three levels of reading interface: The first level is matrix title made up of words and pictures; the second level is full of information which loads multimedia format information such as chart, text, picture, sound, hyperlinks. The third level is an extension of the content of

Table 1. Information service quality evaluation index system.

The indicator system	Information availability	credibility (a1)
		timeliness (a2)
		correlation (a3)
		universality (a4)
		professional (a5)
		objectivity (a6)
	Information usability	Platform design effect (a7)
		Function module design (a8)
		Personal service (a9)
		Connection speed (a10)
		Service adequacy (a11)
	Information adequacy	comprehension (a12)
		accuracy (a13)
		diversity (a14)
	Information professional	Emergency information (a15)
		Emergency knowledge (a16)
		public service (a17)
	Service interactive	service response speed (a18)
		public participation (a19)

Wechat, generally add a hyperlink of "to read the full article", links to external information as supplement of the content [6].

2.2. Theory of the Balanced Scorecard Model

The balanced scorecard is developed by Robert S. Kaplan, professor of Harvard University and David P. Norton, consultant of Boston. The balanced scorecard model provides a comprehensive evaluation model from four perspectives: the customer, internal business processes, innovation and learning, and financial. As a performance management tool, Balanced Scorecard model has been widely applied in different organizations [7]. For example: in 1993, referred to the balanced scorecard model, the USA congress made "the government performance and results act" for the government performance evaluation [8].

3. QUALITY FRAMEWORK AND EVALUATION SYSTEM OF EMERGENCY WECHAT SERVICE

3.1. Framework of Indexes System of Quality Evaluation

In this paper, using the balanced scorecard model to build information service quality evaluation index system of emergency platform of Wechat, It can evaluate the effect of the information service process and services The customer dimension converted into the service interactive dimension, Internal business processes converted into information usability dimension, Innovation and learning dimensions converted into information availability dimension and information adequacy dimension, Because of the free use of the plat-

form, The financial dimension does not make the handle. From above analysis can get initial information service quality evaluation index system of the platform [9]: availability, accessibility, adequacy, professionalism and service interactivity. As shown in Table 1.

3.2. Validation and Optimization

Through the questionnaire survey, the initial index system will be send to the experts for its applicability. The questionnaire mainly used Likert 5 subscales. As of November 15, 2014, a total of 42 survey questionnaires were taken back, 33 questionnaires among them effectively. Then screen the initial index by the method of project analysis and average calculation.

(1) Index screening based on importance degree

Index screening based on importance degree mainly through the project analysis to deal with. Project analysis including reverse problem to score, calculate the scale score, according to the score height, high and low group and with high and low group T test analysis of differences in item. In essence, the project analysis is mainly calculation of degree of distinguish. Take the indexes for independent samples T test to test every index of the average difference. If the CR value of the index reached 0.05 significant level, shows that the index can identify the different degree of reaction of subjects, shall be maintained. On the other hand, consider to delete or modify [10]. Make project analysis of survey data with spss19.0. Partial results are shown in Table 2.

Table 2. The project analysis index system (part).

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	(Sig.)	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
a3	Equal variances assumed	0.797	0.387	1.821	14	0.09	0.75	0.412	-0.133	1.633
	Equal variances not assumed			1.821	13.093	0.092	0.75	0.412	-0.139	1.639
a4	Equal variances assumed	0.326	0.577	1.44	14	0.172	0.5	0.347	-0.245	1.245
	Equal variances not assumed			1.44	13.699	0.172	0.5	0.347	-0.246	1.246
a9	Equal variances assumed	2.011	0.178	1.387	14	0.187	0.625	0.451	-0.342	1.592
	Equal variances not assumed			1.387	12.196	0.19	0.625	0.451	-0.355	1.605
a11	Equal variances assumed	10.592	0.006	1.852	14	0.085	0.625	0.337	-0.099	1.349
	Equal variances not assumed			1.852	9.172	0.096	0.625	0.337	-0.136	1.386

It can be seen from Table 2, In term of the F value of Index a3, The corresponding Sig value is $0.387 > 0.05$, Show that the variance of the score of index a3 are Significant equal In the high score and low score groups. To observe the T value in the line "Equal variances assumed", the Sig. (2-tailed) value is $0.090 > 0.05$, Show that the mean of the score of index a3 are no significant difference in the high score and low score groups, so delete the index a3. In the same way, the mean of the score of index a4 and a9 are no significant difference in the high score and low score groups, so delete the index a4 and a9. In term of the F value of index a11, The corresponding Sig value is $0.006 < 0.05$, Show that the variance of the score of index a11 are Significant unequal In the high score and low score groups. To observe the T value in the line "Equal variances not assumed", the Sig. (2-tailed) value is $0.096 > 0.05$, Shown that the mean of the score of index a3 are no significant difference in the high score and low score groups, so delete the index a11. The mean of the score of other indexes are no significant difference in the high score and low score groups. So we could delete the index a3, a4, a9, a11 by project analysis.

(2) Index screening based on Suitability degree

The difficulty is larger in the practical work if the mean of the index is less than three, thus we delete that. After the statistical calculations, The results showed that most mean of the indexes is greater than 3 which we kept while the mean of index a6 is 2.3, we must delete the index a6.

From what has been discussed above, after inspection, we get a new index system made up of 5 indexes of class 1 and 14 indexes of class 2. As shown in Fig. (1).

4. EXPERIMENT AND RESULT

To make the empirical analysis of information service quality of the emergency platform of Wechat based on the evaluation index system made in this paper can allocate the emergency information resources efficiently and Improve the utilization rate of emergency information resources.

4.1. The Selection of Sample

This article selected six representative platform as the evaluation sample from the emergency platform of Wechat in China including Hainan emergency, Futian emergency, Shanghai emergency, Shantou emergency, Wuhan emergency and Jiangxi emergency, which numbered from VAR1 to VAR6.

We designed 14 items in questionnaire which corresponding with the evaluation index system of the secondary indicators. Totally 100 questionnaires were send with 92 questionnaires get back, among which 70 questionnaires are probably effective.

4.2. Results Based On MDS

MDS is a kind of multivariate statistical methods. Through the distribution of the sample coordinates in low dimensional space, it can reflect the properties of the multiple samples and the degree of similarity between them

In the space distribution, Each sample is a point, the closer distance between point and point, suggests that the more similar samples on dimension feature [11]. Calculate the coordinates of each sample with the help of SPSS19.0, as shown in Fig. (2).

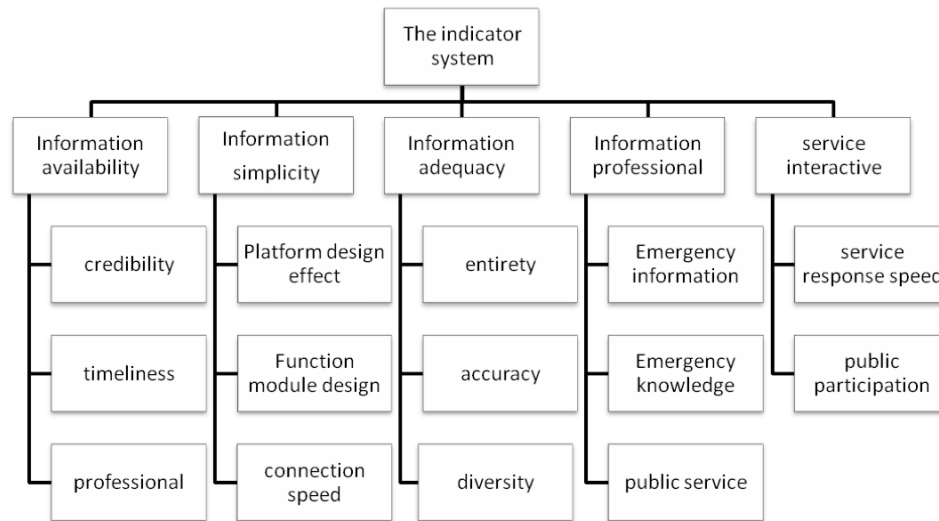


Fig. (1). Index system of information service quality evaluation of emergency platform of Wechat.

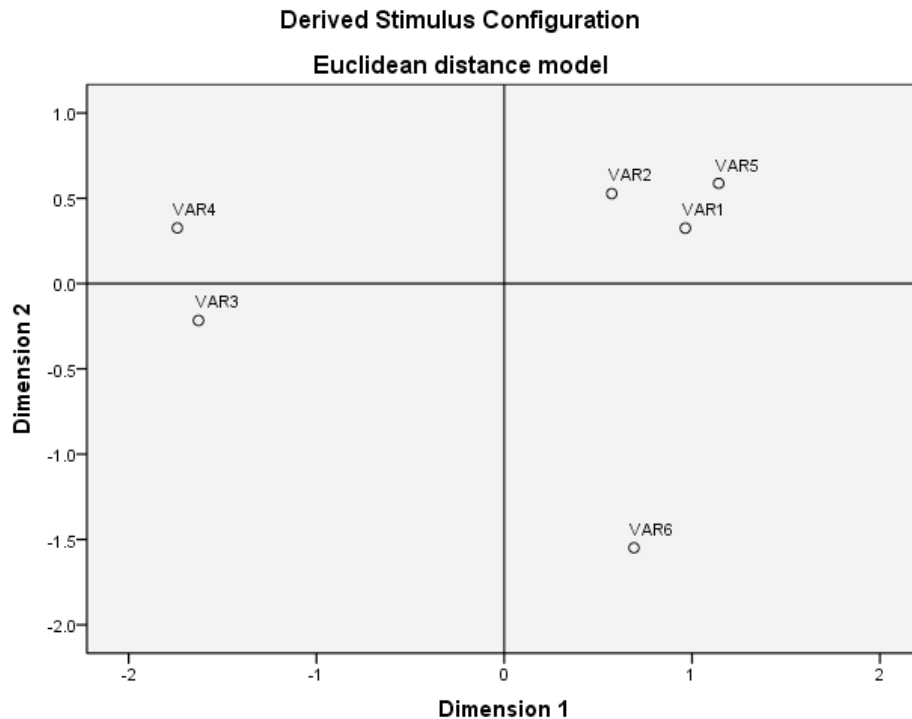


Fig. (2). Derived stimulus configuration euclidean distance model.

Defined the inverse is the quality of the information content. Defined the vertical mainly represent the information service mode of emergency information platform of Wechat. In the figure, VAR1, VAR2, VAR5 are located in the upper right of coordinate axes, indicate that most index scores of VAR1, VAR2, VAR5 are high, Its information service content and quality is good; VAR3 distributes on the left side of the figure in the middle position, Combined with its original data, we found that its information service reliability, timeliness, professional scores are relatively low, explain the information quality is not qualified. VAR6 is located in the lower right part of the space distribution, Explain the scores of content of information service and information service mode are relatively low. Combined with the Jiangxi emergency platform of Wechat, we found that the Information

service content is rare, and did not updated in a timely manner, a single service way, didn't develop custom interface functions. All of these factors make it low scores in all respects. It should pay attention to strengthen the construction and management of the platform.

Through MDS method, users have an intuitive cognition and understanding about information service quality of emergency platform of Wechat.

4.3. Result Based On GRA

Grey correlation analysis method according to the development trend of similar or dissimilar degree between factors, namely "grey correlation", as a measure of the degree of correlation between factors. By comparing how similar the

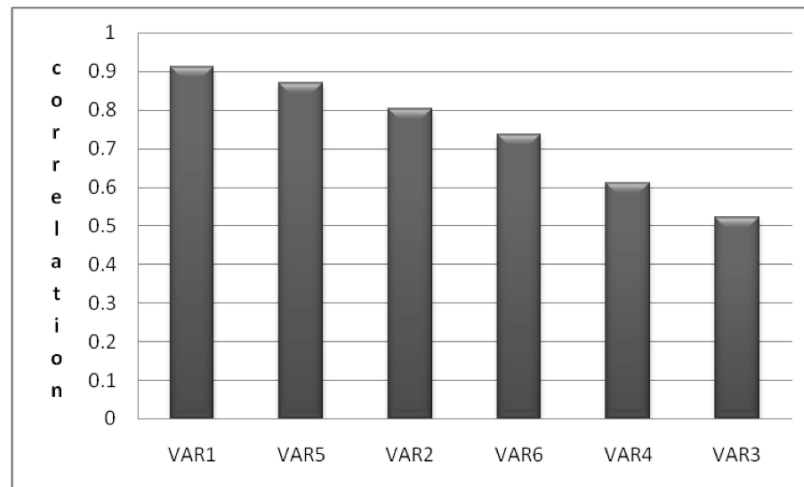


Fig. (3). Coordinate space profiles of sample.

curves list of factual sequence and ideal sequence, we could get the correlation degree. The closer the geometry, the greater the correlation [12].

The result of grey correlation analysis is shown in fig. (3), as can be seen from the figure, the Grey correlation coefficient of Hainan emergency is 0.9104, it is the highest score. Combined with the original survey data, the credibility, timeliness, public participation of Hainan emergency is the highest score, every other also scored the top. The Grey correlation coefficient of Wuhan emergency is 0.869, rank second following Hainan emergency. Combined with the original survey data, Platform design effect and emergency knowledge scores of Wuhan emergency are the highest, but its credibility, timeliness and accuracy index score are lower than Hainan emergency. Above all, the order as follows: VAR1 > VAR5 > VAR2 > VAR6 > VAR4 > VAR3.

5. CONCLUSION

According to the results of empirical research, China has obtained achievements in building emergency platform of Wechat, for example: Hainan emergency has established a relatively sound information service system. By developing a custom interface functions, it can push the latest information more perfect, accurate, make great contributions in the disaster early warning, disaster relief and post-disaster reconstruction. But because most of the emergency platform of Wechat is still at the primary stage of development, there are many problems:

(1) There are few provinces or cities that have developed the emergency platforms of Wechat, part of which has no official certification.

(2) Lack of custom interface functions: Many platforms just push simple news information, the platform functions have no expansion.

(3) Module construction is not perfect, some important function module did not involved, for example: a lot of emergency platform of Wechat have no official relief contacts.

(4) Interactivity is not strong, the message is not timely feedback after the push, and the masses participation is not enough. Government agencies and organizations at all levels should take positive attitude into the construction of emergency platform of Wechat, make it a great tool in Disaster early warning and post-disaster reconstruction.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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